

# Notice of Allowability

Application No.

09/746,949

Examiner

Ted T. Vo

Applicant(s)

GILLIES ET AL.

Art Unit

2122

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/24/04.
2. ☒ The allowed claim(s) is/are 1, 4-14, 16 and 17.
3. ☒ The drawings filed on 26 March 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

*Hoang Anthony Nguyen Ba*

ANTONY NGUYEN-BA  
PRIMARY EXAMINER

1. Responsive to the Amendment and Arguments filed on 8/24/04, filed as a Request for Continuation under 37 CFR 1.114.

Prior arts of record, Tamches et al., "*Fine-grained Dynamic Instrumentation of Commodity Operating System Kernels*", anticipated to independent Claims 1, 8, and 14, remains the closest art of record. Closed art of record, Kiyohara et al., "Register Connection: A New Approach to Adding Registers into Instruction Set Architectures", is further in view to dependent Claims 4, and 6-7. Closed art of record Aho et al., "Compilers Principles, Techniques, and Tools", is further in view to dependent Claims 12-13.

Under this Amendment, independent Claims 1, 8, and 14 are amended and overcome the prior arts of record, Tamches et al.

Claims 2-3, and 15 are canceled.

#### **Reasons for Allowance**

2. Claims 1, 4-14, 16-17 are allowed.

Closest art of record, Tamches, discloses a method that performs register allocation associated with a number of scratch registers. It uses a code patch, appeared as branch/jump instructions, inserted at a predetermined location in a machine code instruction sequence. Since code patch at each instrumentation point is jump or branch instructions, it requires a number of scratch registers used to perform each instrumentation point. This implies a use of certain registers for allocation. The method uses live register analysis to determine the registers that are available for scratch use at an instrumentation point. The method calculates the size of the patch used with scratch register allocation.

However, as pointed out by Applicants that the live register analysis and the assumption of a maximum number of instructions needed are different to their claim, and as further pointed out that Tamches does not teach "generating a number of registers by adding the maximum number of registers and the additional number of registers; modifying the computer executable binary to request the number of registers; and requesting the number of registers" (Remarks: page 6, fourth paragraph).

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Therefore, the following is an examiner's statement of reasons for allowance:

The cited prior arts taken alone or in combination fail to teach claimed invention to method for obtaining scratch registers for use by a procedure and its computer system and computer readable medium comprising at least features:

*"generating a number of registers by adding the maximum number of registers*

*and the additional number of registers;*

*modifying the computer-executable binary to request the number of registers;*

*and*

*requesting the number of registers",*

as recited in independent Claim 1, and in as such manners as in Independent Claims 8 and 14.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (703) 308-9049. The examiner can normally be reached on 8:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (703) 305-4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

After October 28, 2004, examiner can be reached at new telephone number (571) 272-3706 and the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3694.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC)  
at 866-217-9197 (toll-free).

TTV  
Patent Examiner  
Art Unit 2122  
October 15, 2004

A handwritten signature in black ink, reading "Hoang Anthony Nguyen Ba" with a long horizontal flourish extending to the right.

ANTONY NGUYEN-BA  
PRIMARY EXAMINER